

ABSTRACT OF THE DISCLOSURE

A process for the manufacture of a railroad rail of a steel alloy having a pearlitic microstructure. The rail is shaped at a reduction rate of 1.8 to 8% and aligned straight in its longitudinal direction at a temperature between 770 °C and 1050 °C, whereafter it is mounted with the head down and is allowed to cool slowly in still air to a temperature of 5 to 120 °C above the  $A_{r3}$  temperature, and upon reaching this temperature at least the rail head is dipped into a cooling liquid and is cooled to the temperature of conversion of an austenitic grain microstructure into a fine pearlitic grain microstructure.